REMARKS

Applicants gratefully acknowledge the Examiner's statement that claim 53 contains allowable subject matter. Claims 55, 56 and 59 have been amended. Claims 41-60 remain pending in this application.

Claim 55 stands objected to based on certain informalities. Claims 55-60 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended the claims to address the concerns of the Office Action. Applicants respectfully request that the rejection be reconsidered.

Claims 41-51 and 55-60 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ning (U.S. Patent No. 6,709,874). The rejection is respectfully traversed.

Claim 41 recites, *inter alia*, a magnetic random access memory (MRAM) structure comprising "a longitudinally extending planarized conductive line formed within an insulating layer," and "an electroplated bottom sense layer formed over said conductive line."

Claim 47 recites, *inter alia*, a processor-based system comprising "a processor," and "an integrated circuit coupled to said processor, said integrated circuit including a plurality of magnetic random access memory cells, each of said magnetic random access memory cells including an electroplated bottom layer over a planarized conductor."

Claim 55 recites, inter alia, a magnetic random access memory structure comprising "a longitudinally extending planarized conductive line formed within an insulating layer; [and] an electroplated ferromagnetic layer over said conductive line."

Ning discloses an MRAM structure having a magnetic stack 222 that includes a bottom metal stack, a thin dielectric layer, and a top metal stack. The bottom metal stack includes a plurality of metal layers deposited over a conducting layer. The thin dielectric layer and the top metal stack are deposited over the bottom metal stack, and the layers are patterned and etched to form the magnetic stacks 222. Ning does not disclose or suggest a MRAM structure including "an electroplated" bottom layer.

The Office Action continues to assert that the bottom metal stack of Ning could be formed by electroplating. However, the bottom metal stack of Ning is referred to as being deposited by techniques such as physical vapor deposition (PVD), evaporation, ion sputtering, and chemical vapor deposition (CVD). Even more specific, the preferred method of deposition according to Ning is PVD. (See column 6, lines 49-65). Ning fails to mention forming its bottom metal stack by electroplating.

The Office Action specifically points to column 6, lines 35-38 and lines 59-62 of Ning to suggest that Ning refers to an electroplated bottom layer. Applicants respectfully disagree with this conclusion.

As mentioned in Applicants' previous Response, the description in Ning being relied upon in regards to electroplating relates to forming a metal cap layer 220, and not to the formation of an electroplated bottom layer as claimed. Applicants respectfully submit that the metal cap layer of Ning is not equivalent to, or the same as the electroplated bottom layer of the claimed invention.

If any element of Ning was equivalent to, or the same as the electroplated bottom layer of the claimed invention, it would be the referenced bottom metal stack (magnetic stack 222). However, as mentioned above, Ning refers to forming the magnetic stack only by PVD, evaporation, ion sputtering, and CVD. No mention is made to forming the magnetic stack using an electroplating method. Ning was clearly

aware of the electroplating process based on its reference to the method in relation to the metal cap layer. The Office Action cannot simply stretch the teachings of the cited reference to assert that it refers forming an electroplated bottom layer. Ning's use of the term electroplating is in reference to a completely separate element. If Ning intended to refer to forming its magnetic stack by electroplating, the description would have specifically stated so as Ning does in regards to the metal cap layer. Thus, Ning, nor the Office Action, shows that Ning discloses or suggests "an electroplated" bottom layer.

Therefore, claims 41, 47 and 55 should be allowable over Ning. Claims 42-46 and 52-54 depend from claim 41 and should be allowable along with claim 41. Claims 48-51 depend from claim 47 and should be allowable along with claim 47. Claims 56-60 depend from claim 55 and should be allowable along with claim 55. Accordingly, Applicants respectfully request that the rejection be withdrawn and the claims allowed.

Claims 52 and 56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ning and Nikitin (U.S. Patent No. 6,793,961). The rejection is respectfully traversed.

Claims 52-54 depend from claim 41 and thus recite the limitations described above. For at least the same reasons set forth above, Ning fails to disclose or suggest "an electroplated bottom sense layer." The Office Action seeks to overcome the deficiencies of Ning by combining Nikitin. Nikitin, according to the Office Action, is cited as teaching the particulars of the electroplating process. (Office Action at 6). However, it would not have been obvious to one of ordinary skill at the time of invention to combine the cited references to achieve the claimed invention.

Ning relates to a device and method for fabricating conductive lines in the back-end-of-line that prevents oxidation of the conductive lines during photoresist strip

and other subsequent fabrication processes. Nikitin relates to fabricating a soft ferromagnetic film structure with reduced edge stress anisotropy and enhanced magnetization switching speed.

It would not have been obvious to one of ordinary skill in the art to combine Ning and Nikitin to achieve an MRAM structure having "an electroplated bottom sense layer" of the claimed invention. The claimed invention relates to forming an MRAM bit having a bottom sense layer utilizing electoless plating which will reduce the chances having a short within the structure. Thus, there would have been no motivation to combine the cited references to achieve the claimed invention.

Accordingly, Applicants respectfully request that the rejection be withdrawn and the claims allowed.

In view of the above amendment and remarks, applicants believe the pending application is in condition for allowance.

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Respectfully submitted,

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